

Installation Guide

Avaya P116T

STACKABLE SWITCH

Important information

SAFETY PRECAUTIONS

CAUTION – TO REDUCE THE RISK OF ELECTRIC SHOCK AND FIRE

1. All servicing should be undertaken **ONLY** by qualified personnel. The parts inside the unit **CANNOT** be serviced or repaired by the end user. Please call your service representative for assistance.
2. Do **NOT** plug in, turn on or attempt to operate a damaged unit.
3. Ensure that the chassis ventilation slots in the unit are **NOT BLOCKED**.
4. Replace a “blown” fuse only with the same type and rating as is marked on the safety label adjacent to the power inlet housing the fuse.
5. **DO NOT** operate the unit in a location where the maximum ambient temperature exceeds 40°C.
6. Be sure to unplug the power supply cord from the wall socket **BEFORE** attempting to remove and/or check the main power fuse.

PRECAUTIONS DE SECURITÉ

AVERTISSEMENT – POUR RÉDUIRE LE RISQUE DE CHOC ÉLECTRIQUE ET D’INCENDIE

1. Tout entretien doit être fait **UNIQUEMENT** par un personnel de service qualifié. Aucun élément ne peut être réparé par un particulier.
2. **NE PAS** brancher, allumer ou essayer de faire fonctionner une unité sur laquelle un doute existe quant à son bon fonctionnement.
3. S’assurer que les ouvertures d’aération du châssis dans l’appareil **NE SONT PAS OBSTRUEES**.
4. Remplacer un fusible défaillant **UNIQUEMENT** par un modèle du même type suivant les recommandations indiquées sur l’étiquette de sécurité posée dans le logement du fusible.
5. **NE PAS** faire fonctionner l’appareil dans un endroit où la température dépasse les 40°C.
6. S’assurer de débrancher l’alimentation électrique **AVANT** toute manipulation sur le fusible principal.

SICHERHEITSVORKEHRUNG

ACHTUNG – ZUR VERHINDERUNG DES RISIKOS VON ELEKTRISCHEM SCHLAG UND FEUER

1. Die Geräte enthalten keine Bauteile, die außerhalb des Avaya Servicezentrums gewartet oder repariert werden können. Die Wartung darf **NUR** von qualifiziertem, technischem Personal durchgeführt werden.
2. **NIEMALS** ein beschädigtes Gerät einschalten, oder versuchen es zu bedienen.

3. Vergewissern Sie sich, dass die Chassis Ventilationsöffnungen des Gerätes NICHT BLOCKIERT sind.
4. Austauschen einer durchgebrannten Sicherung NUR mit der gleichen Sorte und Belastbarkeit wie sie auf der Sicherheitsaufschrift markiert ist. Die Aufschrift befindet sich neben der Stromzufuhr wo sich auch der Sicherungskasten befindet.
5. Bedienen Sie das Gerät NICHT an einer Stelle an der die Umgebungstemperatur 40°C übersteigt.
6. Ziehen Sie das Netzkabel raus, BEVOR Sie versuchen die Hauptsicherung zu kontrollieren oder auszutauschen.

Overview

This guide is divided into two sections:

- Overview: A general description of the features of the P116T Stackable Switch.
- Installation: Instructions for getting the P116T Stackable Switch and P110 Switching System up and running.

Description

The P116T Stackable Switch is part of the P110 Switching System family of workgroup switches. The P110 family is composed of high-performance workgroup switches which may be used singly or stacked in any combination to make up a multi-protocol, non-blocking, scalable switch.

The P116T is a workgroup switch with 16 autosensing Ethernet/Fast Ethernet (10/100BASE-T) ports. The 10 Mbps ports are ideal for workgroup connectivity, while the 100 Mbps ports can be used for server connections, high performance workstations, or to link to another P116T or P113T unit.

The P116T can operate standalone or as part of a stack. A stack requires a P110 NMA to link the switches. The units are physically linked using the P110 Exoplane, which makes up a multi-gigabit, non-blocking backplane. Any combination of two, three or four P110 switches can be stacked, and up 32,000 MAC addresses per stack are supported. Only three P116T hubs can be connected on a stack, and a fourth switch can be connected to the stack only if it is a different P110 model.

All ports can run at full or half duplex Ethernet. With a P110 NMA installed, the ports can perform standards-based auto-negotiation. Port software-redundancy can be defined via CajunView or MSNM SNMP-based management system. A redundant power supply may be used for enhanced fault tolerance.

The P116T ports can use Avaya's flow control mechanism to eliminate packet loss. An automatic fairness mechanism ensures that all ports gain fair access to the P110 Exoplane even at very high network utilization. Congestion management works half duplex ports, and ensures no packet loss should the buffers become saturated during peak load conditions.

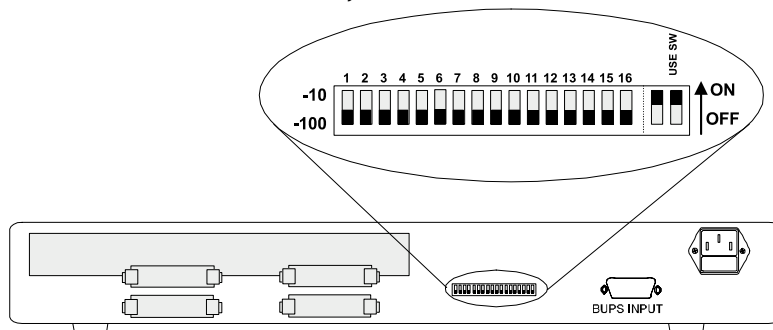
P110 switches are fully manageable, using CajunView or MSNM, and may be monitored using the SMON Manager Switch Monitoring Application.

Installation

Setting the DIP switches

First, set the DIP switches. The position of the switches depends on the P110 application. The drawing below shows the default positions of the DIP switches on the rear panel of the P110 hub.

Figure 1 The P116T Stackable Switch Rear Panel Showing The DIP Switches In their Default Positions



The DIP switches control the sixteen 100 Mbps ports. The ports can also be controlled by CajunView, MSNM, or any SNMP network management application via the P110 NMA. A detailed explanation of the DIP Switches follows.

- 1-16: Selects whether the port will operate at 10 Mbps or 100 Mbps.
- USE SW (Use Switches): Selects whether the 10/100 mode will be controlled from the management station or by the DIP switches. When set to ON, 10/100 Mbps switch settings are determined by the DIP switches only. Settings can be monitored, but not changed, by the management station.

When set to OFF, the DIP switch settings are ignored and the 10/100 Mbps port functionality is controlled from the management station via the P110 NMA, or via auto-negotiation.

Set to ON when you don't have SNMP management, or when you want to ensure that the settings will not be changed.

- ① In stand-alone mode (that is, with no P110 NMA installed), the 10/100 mode is always controlled via DIP switches 1-16.
- ① Always reset the hub after changing switch configurations.

Table 1 DIP Switches on the P116T Stackable Switch

Switch	Function	ON	OFF
Switches 1-16	Selection of port speed	10 Mbps	100 Mbps (Default)
(second switch from the right)	Not used		
USE SW (Use Switch)	Selection of operational mode: control by management station or DIP switches.	Ignore management settings. Use switches. (Default)	Use management settings. Ignore switches.

Once you have set the switches, you may proceed with the physical installation of the hub.

Installing the P116T Stackable Switch

The procedure for getting the P116T Stackable Switch up and running depends on whether the hub is to operate standalone or as part of a stack.

First, attach the adhesive rubber feet to the base of the P110 switch. If the switch is to be rack mounted, do not attach the feet.

Standalone Operation - Plug 'n' Play

Getting the P110 hub working is quick and easy:

1. Connect the power cable to the hub,
2. Connect the cables to the front panel ports,

To ensure proper ventilation, ensure that the P110 NMA slot is closed.

The hub is now fully operational. By default, all ports will operate as 100 Mbps ports, in half-duplex mode. Port settings can be changed using the DIP switches

Stacking Operation

To make the P116T work as part of a stack (and to give SNMP management capabilities to a single P116T), a P110 NMA with the correct software version (8.4 or higher) is required. See the Release Notes for the required version.

You should make sure the P110 NMA has the latest agent software. To check what software version you have, see the agent configuration window in CajunView or MSNM, or see the setup main menu of the P110 NMA.

2. Before adding a switch to the P110 stack, turn off the main power to the stack, by individually switching off each hub
3. Place the P110 NMA in the top hub of the stack
4. If the P110 NMA contains the latest software version, go to step 4.
5. If the P110 NMA does not contain the latest agent software, you should perform a software download of the latest version. The latest software is in always shipped with the P110 NMA.

Download is performed via FTP using a Terminal console or via CajunView or MSNM – details can be found in the P110 NMA installation Guide.

- ① When a P110 unit is added to, removed from or swapped in a stack, all Ethernet port settings (Administration Status, Port Mode, port speed and VLANs) will return to their default values. However, the Administration and Port Mode status of the P113F 100 Mbps ports will retain their values.

- ① Configuration parameters will be set back to factory defaults if they were set using the management station. The factory default parameters are described in the P110 NMA 8.4 Release Note.
- 4. Place the P116T and any other additional P110 hubs in the stack.



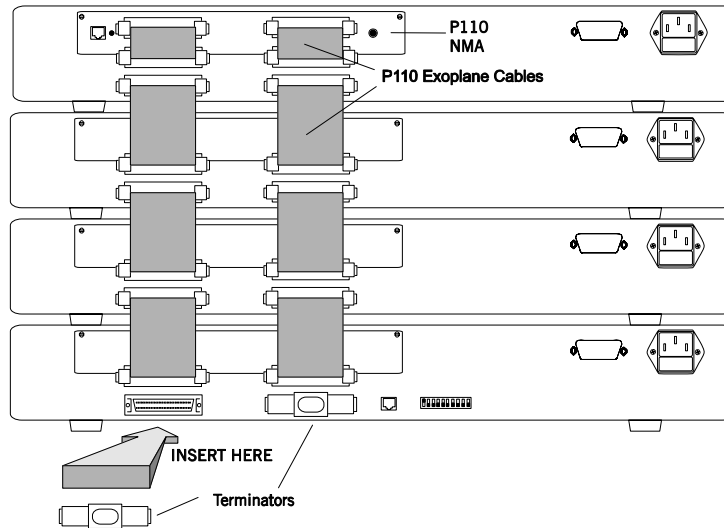
Caution: You cannot connect more than three P116T hubs on a stack. If you wish to connect four hubs in a stack, the fourth hub must be a different P110 model.

- 5. Connect P110 hubs using the P110 Exoplane cables, as shown in Figure 2. A hub connects to its upper neighbor through two P110 Exoplane cables, and to its lower neighbor through another two Exoplane cables.
- ① Make sure that the P110 Exoplane cables are correctly seated by gently exerting pressure on the back of the connector.

Cabling Requirements:

- For correct operation, the P110 Exoplane must be fully connected, with all units powered up. In case units are stacked, the P110 NMA **must** be installed and connected to the P110 Exoplane. Failure to observe this requirement will cause the units to block all traffic on attached stations and segments.
- When using the P114T or P114F in the stack, make sure all switches in the stack are connected using P110 Exoplane cables with white connectors and marked C/S:B (part number 108362203). Extra cables can be ordered from your local Avaya representative.

Figure 2 Rear view of a P110 switch stack, showing how the switches are linked via the P110 Exoplane cables. A P110 NMA resides in the uppermost switch.



6. Two terminators are supplied with the P110 NMA. Insert the two terminators into the lowest two connectors at the bottom of the stack, as shown in Figure 2.
 7. Turn on the mains power to the stack, by individually switching on each switch.
 8. Connect the fiber-optic cables to the front panel ports.
- ① If the P110 NMA in the stack contains the correct software version (as specified in the P116T Stackable Switch Release Note) or higher, the stack is now fully operational.
 - ① When a new version of the P110 NMA software becomes available, you should perform software download to benefit from the extra capabilities provided. See the P110 NMA Installation Guide for details.

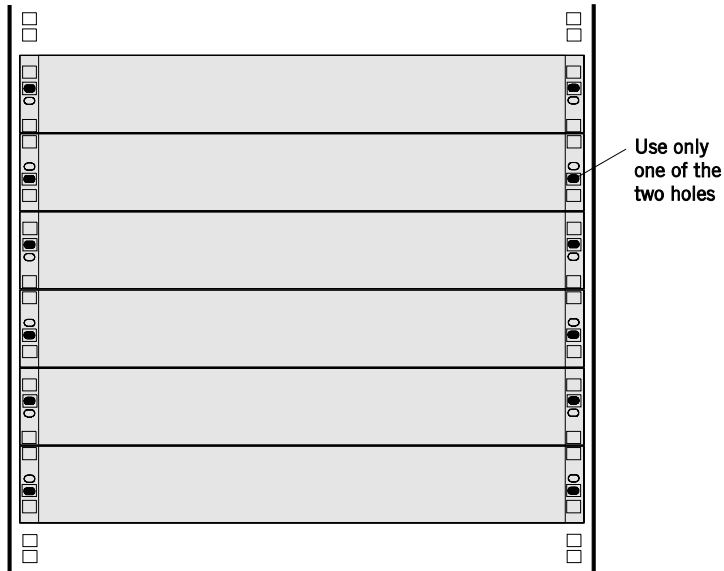
Rack Mounting

P110 switches slot into a standard 19 inch rack.

Remove the rubber legs from the base of any switch that is to be rack mounted. Place the switches in the rack, and then connect the P110 Exoplane, as follows:

1. Snap open the ends of the front panel to reveal the fixing holes.
2. Slot the switch into the rack. Insert the switches into the rack so that the switches in a logical stack lie directly on top of each other. Ensure that the P110 screw holes are aligned with the rack hole positions exactly as shown in Figure 3. Stacking them in this way will allow the switches to be easily connected using the Exoplane cables.
3. Secure the switch in the rack using the screws. Use one screw on each side. Do not overtighten the screws to avoid damaging the plastic.
4. Connect the Exoplane cables, as described above, and as illustrated in Figure 2.
5. Snap closed the hinged ends of the front panel.

Figure 3 P110 rack mounting arrangement



Key

- Hole in rack
- Screw hole in P110
- Screw position

Diagnostics

Tables 2 and 3 explain the meaning of the P116T Stackable Switch diagnostic LED indicators.

Figure 4 The P116T Stackable Switch Front Panel LEDs and Buttons

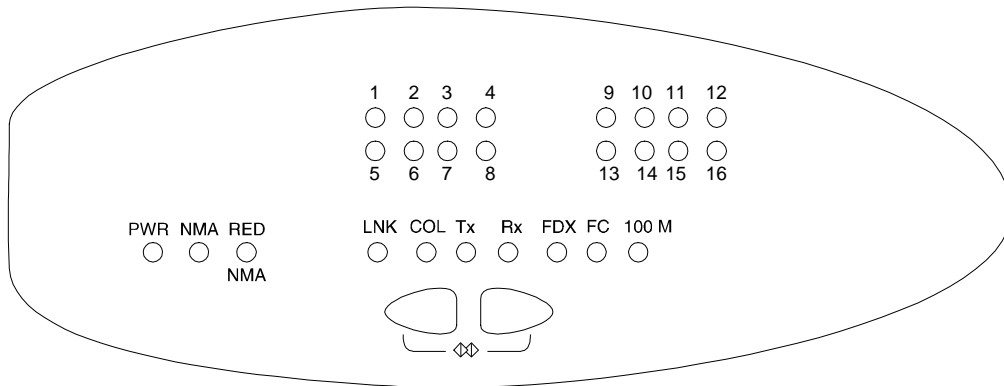


Table 2 Meaning of the P116T Stackable Switch Front Panel Buttons



Button	Function	Meaning
	Select	<p>The buttons determine what function will be displayed by the 16 Port LEDs (the top two rows of LEDs).</p> <p>The seven Function LEDs (above the Select buttons) show which function is currently displayed by the Port LEDs. The Port LEDs can display either Link, Collision, Transmit, Receive, Full Duplex, Flow Control or 100 M status</p> <p>If, for example, the Link (LNK) LED is lit then LEDs 1 to 16 will display the Link status of every port.</p> <p>Press the left or right button to toggle the Port LED display between functions</p>
	Reset	<p>Press and hold both buttons simultaneously for a second or more to reset the <i>entire</i> P110 stack. Upon Reset, all LED indicators turn on. Pressing Reset does not affect configuration settings.</p>

Table 3 Meaning of the P116T Stackable Switch front panel LEDs

LED Indicator	Function	Status	Meaning	
PWR	Power	OFF ON Blink	Mains power not connected Mains power connected Working on back-up power supply	
NMA	Agent	OFF ON	No agent in hub Hub contains an active agent	
RED NMA	Reserved for future use			
Port LEDs	1 to 16	Each LED can display one of the following functions: Link, Collision, Transmit, Receive, Full Duplex, Flow Control or 100 M states, depending on what has been selected using the Select buttons.		
Function LED		Port LED		
	LNK	Link status	OFF ON Blink once	Port Disabled Port is enabled and link is OK Link Test Fail.
	COL	Collision	OFF ON	No Collision Collision occurred on line
	Tx	Transmit to line	OFF ON	No activity Data transmitted
	Rx	Receive from line	OFF ON	No activity Data Received
	FDX	Half/Full duplex	OFF ON	Port in Half Duplex mode Port in Full Duplex mode
	FC	Flow control	OFF ON	Flow Control Inactive Flow Control Active
	100 M	Port speed	OFF ON	10 Mbps 100 Mbps

© 2003 Avaya Inc. All rights reserved.

All trademarks identified by the ® or TM are registered trademarks or trademarks, respectively, of Avaya Inc. All other trademarks are the property of their respective owners.

Document number: 130007 Rev. 0. November 2003